

THE  
**NATIONAL GEOGRAPHIC**  
**MAGAZINE**

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WASHINGTON

PUBLISHED BY THE NATIONAL GEOGRAPHIC SOCIETY

FOR SALE AT BRENTANO'S

31 UNION SQUARE, NEW YORK; 1015 PENNSYLVANIA AVENUE, WASHINGTON;  
 215 WABASH AVENUE, CHICAGO; 57 AVENUE DE L'OPERA, PARIS

Price 25 Cents

\$2.50 a Year

# National Geographic Magazine

AN ILLUSTRATED MONTHLY

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*Publication of the U. S. Department of Agriculture*

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The list of contributors to the NATIONAL GEOGRAPHIC MAGAZINE includes nearly every United States citizen whose name has become identified with Arctic exploration, the Bering Sea controversy, the Alaska and Venezuela boundary disputes, or the new commercial and political questions arising from the acquisition of the Philippines.

The following articles will appear in the Magazine within the next few months:

"Russia," by Professor Edwin A. Grosvenor of Amherst College, Massachusetts.

"The Colonial Expansion of France," by Professor Jean C. Heneq of Vassar College, Poughkeepsie, New York.

"The Samoan Islands," by Mr. Edwin Morgan, Secretary of the Samoan Commission.

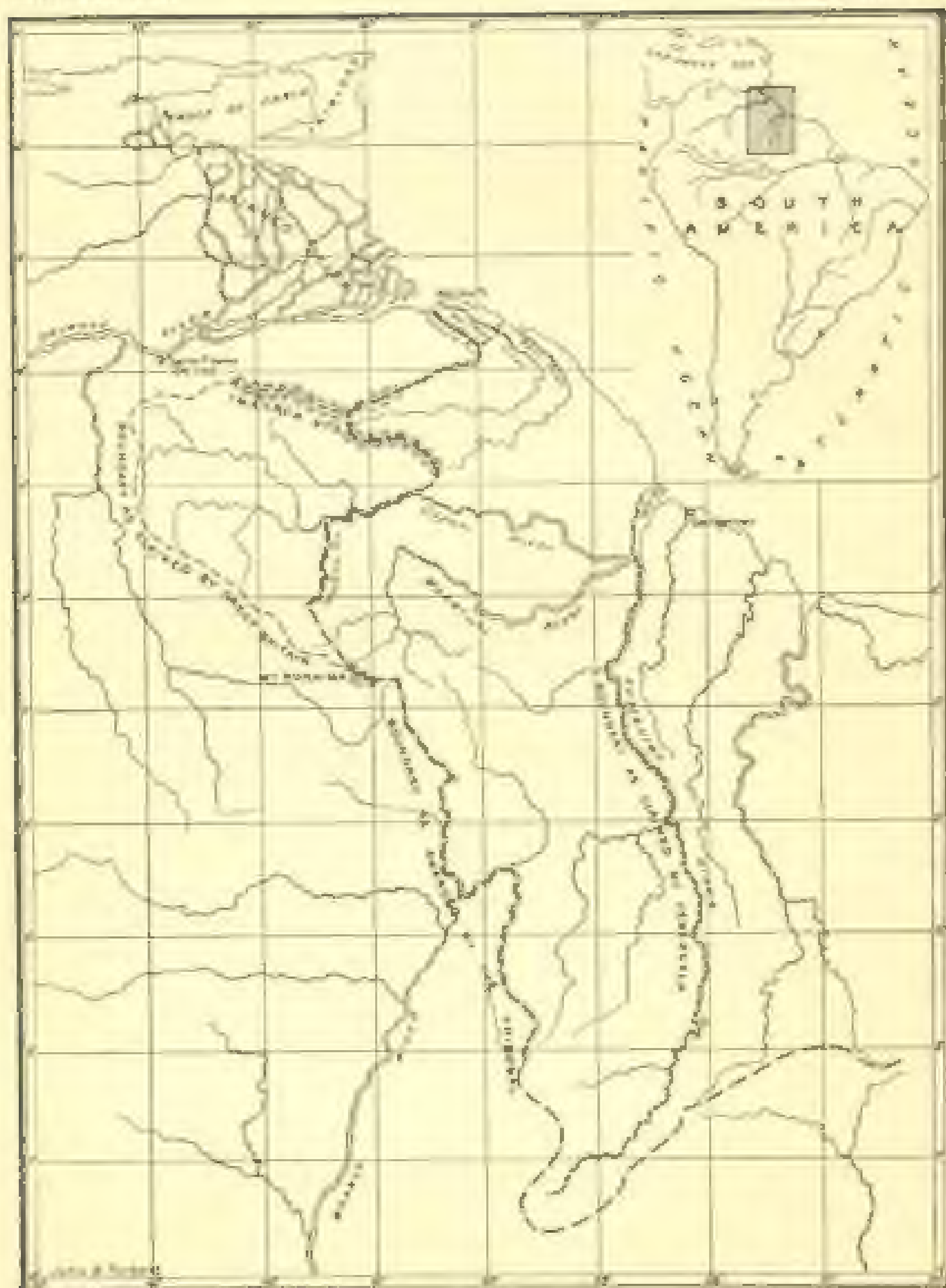
"The Native Tribes of Patagonia," by Mr. J. E. Hatcher of the Carnegie Museum, Pittsburgh, Pennsylvania.

"The Characteristics of the Filipinos," by Hon. Dean C. Worcester of the Philippine Commission.

"Discoveries in the Fossil Plants of Wyoming in 1897," by Prof. William C. Knight of the University of Wyoming.

"Explanations on the Yangtze-Kiang, China," by Mr. Wm. Barclay Parsons, C. E., surveyor of the railway route through the Yangtze-Kiang Valley.





MAP SHOWING BOUNDARIES AS CLAIMED BY GREAT BRITAIN AND VENEZUELA AND AS AWARDED BY THE PARIS TRIBUNAL, 1899

THE  
NATIONAL GEOGRAPHIC MAGAZINE

VOL. XI

APRIL, 1899

No. 4

THE ANGLO-VENEZUELAN BOUNDARY DISPUTE

By MARCUS BAKER.

*Cartographer, U. S. Geological Survey*

*Introduction.*—For nearly three score years Great Britain and Venezuela had wrangled over their boundary. No dividing line had ever been drawn by them, acting together. Venezuela always claimed to the Essequibo River. Great Britain, successor to the Dutch, claimed all the Dutch had had. The Dutch never established their limits on the Venezuelan side, and their indefinite western limit did not shrink in the hands of the British. In the course of a long diplomatic correspondence, proposals and counter-proposals were made and rejected. Thus for fifty-five years the squabble dragged on and on, from the days of Schomburgk, in 1841, to the day of Cleveland, in 1895. Cleveland's now famous message has been called harsh, but, as has been well pointed out and as the sequel shows, it made for peace. Sometimes a frank, blunt word, like the surgeon's lancet, hurts cruelly, but cures.

Already the story of this dispute is ancient history. It requires some imagination to recall the tension which, only four years ago, strained, almost to the breaking point, the friendly relations of the two greatest world powers. War between Spain and America; war between Great Britain and the South African Dutch; Venezuela torn and rent by civil war; and in the midst of it all a peace conference of the nations at the Hague striving, working, hoping for perpetual, universal peace.

Boundary disputes, whether between individuals or nations, are wont to be long and bitter; and, oftener than otherwise, changes of boundary result from war. Sometimes the result is direct, sometimes

indirect. The bitterness over the Alsace-Lorraine boundary is strikingly in evidence on the continent today. The boundary line between Massachusetts and New Hampshire, surveyed and marked in 1741, has, after a lapse of about 150 years, only recently been accepted. The Alaskan boundary, established in 1825, still drags on, unsurveyed and unmarked, a source of growing irritation and bitterness.

*The Disputed Tract*.—The tract in dispute comprised an area of about 50,000 square miles. England, with an area of 51,000 square miles, and New York, with an area of 49,000 square miles, is about equal in extent to the territory in dispute.

The tract is bounded on the east by the Essequibo, on the north by the Atlantic and lower Orinoco, on the west by a low, flat watershed separating it from the Caroni, an affluent of the lower Orinoco, and on the south by a mountainous district forming the watershed which separates the streams flowing northward to the Atlantic from those flowing southward to the Amazon. It is included between the 4th and 10th parallels of north latitude and between the 58th and 64th degrees of west longitude. It may be broadly characterized as a low, bench country, buried for the most part beneath a tropical forest of marvelous density and beauty. Lying near the heart of the torrid zone, with the sun passing day after day forever through or near the zenith, and through two rainy seasons of each year furnished for weeks together with downpours of warm rain that suggest a deluge, we have the conditions of nature's own hot-house. From these two conditions of excessive heat and excessive moisture comes the forest covering, which in density, beauty, and variety travelers agree in describing by the word *inscrutable*. Beyond the forest tracts there are, in the interior, unforested districts called *savannas*, which, according to character of soil and altitude, are either swampy, hard and grass-covered, or partially desert. The culminating point of the region is Mount Roraima, about 220 miles from Demerara, on the coast, near latitude 4° and longitude 61°. This mountain is a sandstone mesa whose almost inaccessible flat top is 8,000 feet above the sea-level. Its walls are everywhere cliffs more than half a mile high. From this natural rock fortress the country gently slopes away and then drops in cliffs or benches, so far as we know. In this benched country are deep canyons, with numerous waterfalls—one the Kaieteur fall, on the Potaro, being 900 feet high. Pictures of Mount Roraima and Kaieteur Fall may be seen on the current issue of British Guiana postage stamps.



Guiana is a name that was applied three centuries ago to an extensive and ill-defined tract along the coast between the Amazon and the Orinoco. This has come, in course of time, to be possessed by French, Dutch, and English. The easternmost is French Guiana or Cayenne, whose Devil's Island Dreyfus has made famous or infamous. Next west is Dutch Guiana or Surinam, and west of it is British Guiana, formerly the united colony of Essequibo and Demerara. Most of the part yet farther west, which was sometimes called Spanish or Venezuelan Guiana, has been awarded to Great Britain.

Great efforts were made by Spain three centuries ago to conquer and possess Guiana, a region reported and believed to be fabulously rich in gold. On the shores of a vast mythical sea rose a vast mythical town, El Dorado, presided over by a mythical, gilded king. Raleigh sought to conquer this country and its supposed wealth for his queen, Elizabeth; but the Spaniards contested his advance. His son was killed in the assault upon Santo Thomé. He returned to England, was accused by the Spanish minister of piracy, and by order of King James beheaded. But, though he wrote a book about Guiana which set the imagination of Europe on fire, little progress was made in penetrating or exploring it. And why? The answer is easy. The dense forests offered to the white traveler an almost impenetrable barrier. These were traversed by savage animals and yet more savage men, the ferocious, man-eating Caribs. The only practicable route to the interior was by the rivers; but the region is a bench country, rising, as one penetrates it, by a series of steps or benches. Thus it happens that, ascending the rivers (other than the Orinoco), the border land of alluvium on the coast is hardly passed before the traveler meets a cataract or rapid or series of rapids blocking the way. Patiently carrying or dragging his wood-skin canoe through dense woods around the obstacle, he may paddle a short distance against a strong current only to find another cataract and yet another in wearisome succession. To penetrate the interior through the water-soaked and swampy forest jungle is well-nigh impossible. To penetrate it by the streams is only possible in small boats, and then with difficulty and danger. These are the conditions and these the reasons why the world was so long in gaining its small store of knowledge about the interior of Raleigh's wonderland, Guiana.

*Origin of Title.*—Neither Venezuela nor Great Britain holds in South America by original title. Venezuela derives her title from Spain, a title acquired by war, with resulting conquest and cession. Great

Britain similarly acquired her title from the Dutch by war, with resulting conquest and cession. Venezuela succeeded to Spanish rights and Great Britain to Dutch rights. Thus the arbitral tribunal was engaged in trying the title to a piece of real estate. True, the estate was large; true, the parties were great corporations. Trial to the title of a tract claimed by two states of our Union may be tried before our Supreme Court, but no permanent court exists for trying the title to lands claimed by two nations. The appeal, therefore, has often, in such cases, been to the force of arms rather than to the force of argument. By agreement of the claimants in this case, the matter was to be settled by a battle of brains rather than by a battle of bullets.

Spain's title to the disputed territory is thus stated in Venezuela's case:

Spain first discovered the new world; first explored its continents; first explored, possessed, and settled Guiana, and first firmly established herself in that province as its sole and lawful owner.

Similarly, Venezuela's title is thus stated:

Venezuela revolted from Spain April 19, 1810. On March 30, 1845, Spain recognized Venezuela's independence and formally renounced in her favor all the sovereignty, rights, and claims previously her own in the territory formerly known as the Captaincy-General of Venezuela. Said territory included the region now in dispute.

Such is the Venezuelan title. The British title cannot be so succinctly stated. In very brief, however, it is as follows:

In 1581 the Dutch, then subjects of Spain, revolted and entered upon that long and bloody war which resulted in their independence in 1648. During this war the Dutch, in 1605, made a trading voyage to the Guianon coast. This voyage, made 100 years after the Spanish discovery of this coast, was the first Dutch voyage thereto of which we have any definite knowledge. Already Trinidad had been occupied by the Spanish, a Spanish settlement planted on the lower Orinoco, and formal and ceremonial possession taken of Guiana by Spaniards in the name of their King. In June, 1621, was created by the States-General of the United Netherlands the Dutch West India Company. By the terms of its charter no native or inhabitant of the Netherlands was permitted, except in the name of the company, to sail upon or trade with the countries of America and the West Indies, from Newfoundland to Cape Horn and from Cape Horn to Bering Strait. Trade to the New World, without permission of the company, was, by the charter, forbidden to all Dutchmen. The company ex-



lated for 63 years. After several extensions of its charter it finally died in 1674, and a wholly new Dutch West India Company was then created, which lived for 117 years, being finally dissolved in 1791.

Under the original charter of 1621 the company, in or about the year 1626, established a trading post some 50 miles up the Essequibo, at the junction of the Cayana and Marumú rivers, on a small rocky island, which they named Kykoveral, or See-over-all. Here lived a few unmarried employes of the company and carried on with the natives a trade for the dyes of the forest, balsam, hammocks, canoes, etc. There were no colonists, no cultivation, save possibly a bread garden, and no industries, save, probably, fishing for the use of the post. It was a trading post, and was, down to 1648, the sole Dutch occupation of the disputed tract. Under those conditions the long war between Spain and her rebellious subjects ended in 1648. By the treaty of peace at Münster in that year the Dutch achieved their independence. At the same time and by the same treaty Spain agreed that the Dutch should "remain in possession of and enjoy such lordships, towns, castles, fortresses, commerce, and countries of the . . . West Indies . . . and America" as they then held and possessed.

This, then, was the Dutch title, a title which remained Dutch for one hundred and sixty-six years. In April, 1796, Great Britain and the Netherlands being then at war, an English fleet appeared at Demerara and took possession of that river and Essequibo. Possession was held by the English for six years. In 1802, by the peace of Amiens, these possessions were restored to the Dutch. But war broke out again the next year, and Great Britain again took the possession which has since remained unbroken. The war, which broke out in 1803, was terminated by the treaty of London, in 1814, whereby the Netherlands ceded to Great Britain the Cape of Good Hope, in Africa, and the establishments of Demerara, Essequibo, and Berbice, in America.

Such is the Dutch-British title, which may be still more succinctly stated as follows: The Dutch, while subjects of Spain, revolt and squat on Spanish land in America. When the war ends Spain confirms to them the possession they have taken. This possession is afterward, in war, taken from the Dutch by the British. The possession taken by the British is confirmed to them by treaty, and such is the British title.

*Schomburgk and His Line.*—Much has been heard during this controversy about Schomburgk and his line. A few words, therefore, on this theme.

Robert Hermann Schomburgk was born in Freiburg, Saxony, in 1804, and died in Berlin in 1865, aged sixty-one. Between 1825 and 1830 he was in the United States, first in Boston and later in Richmond, Virginia, where he was in the tobacco business. Failing in this, he went to the West Indies, where he surveyed the island of Antigua. His published observations on the cultivated plants of the West Indies brought him to the notice of the Royal Geographical Society, which in 1834 engaged him to explore in Guiana. He reached Georgetown or Demerara, as it is usually called, for the first time on August 5, 1835, and for nine years thereafter was engaged in exploration and survey work in Guiana. For the Geographical Society he made three journeys, of about six months each, into the interior, and in October, 1839, returned to England. Early in 1840 he published his little book, entitled *Description of British Guiana*. The Geographical Society awarded him a gold medal, the King of Prussia knighted him, and the same year Great Britain engaged the now Sir Robert Schomburgk to survey the boundary between British Guiana and Venezuela. This was not to be a joint survey, but only a British survey, the results to be presented to Venezuela and Brazil as a statement of the British claim. He returned from England to Georgetown in October, 1840, and made three more trips to the interior, now under government auspices. In May, 1844, he took final leave of Guiana and went to Barbados, where he stayed some time and wrote a history of the island. In 1848 he was made British consul at Santa Domingo. In 1857 he was sent to Siam as Her Majesty's Consul-General. In declining health he returned to England in 1864 and retired on a pension. He died in Berlin the following year.

With him during a part of his explorations was his brother, Richard Schomburgk, a trained botanist, who published an interesting account of the Guiana exploration, a work in three stout octavo volumes. Sir Robert, having informed himself as well as the means at hand and his zeal for his employer would allow, proceeded to trace out on the ground a line, setting up posts, blazing trees, and marking them with British insignia. His zeal seems to have overmastered his judgment, and all doubts were resolved in favor of his employer. Why not? Was not his line, after all, only a chain? But, alas, it came later to be treated as a line of right. The Schomburgk boundary survey grievously offended Venezuela. She protested at once, and insisted upon the removal of the marks. To this Great Britain, at length, consented, with the usual proviso that

by Sir John Macdonald, one of her rights. This survey of 811 miles resulted in a tremendous labour may be regarded as the beginning of the modern University.

In 1841 Sir John Macdonald submitted to Sir James Lister, the governor of British Columbia, a request setting forth the reasons why a map should be made of the Province and of British Columbia. This was an official report intended for the public, and was printed in the *Colony and Port of Victoria* paper. On the same day, however, he wrote to Governor Lister a confidential letter pointing out the importance of a correct account of the possession of British Columbia as a point of view regarding the relations of the Province to the United States. In this letter he drew attention to the fact that the occupation of British Columbia meant the consideration of the military control of the entire Pacific region. He also furnished a map showing the area claimed by him for Great Britain. What the foreign office thought of Sir John's arguments he did not know. He stated it as a matter of fact that his map was not made public for many years. The map shown thereon, save Great Britain and the possessions, is in many places marked as "discovered by the British" or "discovered by the United States".

It may be remarked that in phrase *The Dominion of the United States* is a term which is popular and official usage, something different from the use of Schomburgk's name. It was sleeping, unknown to the public and unknown to some of the officials of the government and was.

There was printed on July 11, 1841, in London, a large fine map of the Province of British Columbia, which has been often referred to as the *Green Island Map of the Province*. This map was engraved and printed by Stanford of London. It is dated 1841. The title page contains that it was drawn on the basis of surveys by Sir John Macdonald and corrected to date from surveys by the crew of the *Albatross* and by the government geologists, Brown and Sawkins. The map bears the note:

The boundaries indicated in this map are those laid down by the late Sir James Macdonald, who was engaged in exploring the Province during the years 1841 to 1843, under the direction of the Royal Geographical Society; but the boundaries laid down, however based on the same sources of information on the other and the course of the coast line is not to be taken as a derivative, as it is not

corrected to the present day. The government of Great Britain and the United States.

shown by water neither is it likely to be much upon the surface, perhaps raised, by fire.

This map, compiled from official sources and with a representation of it sent to the *Schomburgk* Co., was accepted as the official one for all my work. When the geographer Schomburgk and I were about to go to the interior and some of the officers took interest in our work to the point of showing on the map all I stopped there.

In 1886 or 1887 another edition of the map appeared. The representation of the appearance of water in the interior is a somewhat different one. The lake is increased and the distance 1875, as before, and the note as to the lake has been changed in a number of places. The new lake is now larger, and having a generally oval shape, it is present in a locality where a large British (or American) contract is mentioned. The change made at the instance of the government may be regarded as a fresh indication of the influence of the *Schomburgk* Co. in 1884. It is perhaps, however, to our credit that a government of Venezuela has displayed an order of the war for at the least the greater of the *Schomburgk* party in such a way of the United States to make out on the Venezuelan frontier a piece of a letter was sent in honouring the private work of *Schomburgk* Co.

I was asked for some labour and a number of which there was a number of the arguments of counsel for Venezuela at the arbitration. Although over ten nations the story of the world, those who have been resisted, and the arguments were maintained to a large extent in the great museum and the great international legislature.

*The question of the evidence.*—The story of the correspondence between the governments concerning the boundary is too long and too complicated to tell here. Suffice it to say that there were proposals and counter-proposals, some of which proved fruitless. No agreement was reached. Several times Venezuela requested and obtained several times from Britain a refusal to do so. In October, 1889, the British Government insisted on the *land of the* and on the fact that information had come that Venezuela had made grants of land in the disputed territory and by saying that as the grants would not be recognised. I do not of course need to say that

map showing the boundary between the two countries and Venezuela came to the United States. The only man for my work was of the name of the young Spaniard and he was of the government secretary of the United States.



these proceedings have at no time been confined to law and almost if not the whole of it applied, not a single vote was recorded against it or even a dissent. What stronger evidence of the complete success of the mission could there be? And yet only last week a prominent London newspaper says:

We were brought to the verge of war four years ago for sake of Mr. Cleveland's collection, and a pretext for and play into quarrels will never be wanting while the interests of both nations of the Republic have to be set at naught.

Thus at January 1891 was born the United States Commission, composed, of David J. Brewer, Associate Justice of the Supreme Court of the United States, Richard L. Allen, Chief Justice of the State of Appona of the State of Colorado, and of Major General, Mr F. R. Conner, a distinguished member of the New York Board of Council for the United States, the former sea-captain, Dr. J. L. Smith, geographer, professor of Johns Hopkins University, and Dr. Andrew H. White, a prominent educator.

As chairman, the commission chose Judge Brewer, and as secretary a

well-known lawyer. These persons, lawyers, and set of records, passed to United States Commission, which began work at once, the commission office in the Sun Building, on F Street, and began investigation. Floods of information were poured in upon them, and plans of operations for investigation. For a few weeks the work was done, and the news item of the British and American press. To read the reports of scholars, Justin Winsor, of Harvard College, distinguished for his great work on American history and geography, Prof. J. Frank Johnson of Brown University, especially famed for his history of the Dutch in America; and especially distinguished Prof. George L. Harr, of Cornell University, from whom for most of the past several research work. I have not space to mention the names of the other members of the work done and put in a hurried by him. For and the geographical studies the commission came to the Geological Survey, and a staff of several known geographers of the experts in that line. After preliminary studies the work was organized, and Professor Harr went to the field to look into the river the later records. Here he was joined later by Mr Conner. The secretary made, in the Harvard library, a special study of the maps of the region, and similar studies were carried on in Washington. It is a fair remark to say that the studies thus conducted threw much new light on the question, that supposed facts were in some important









and at once, Great Britain's in some matters and in others  
 + + + + + is later in July 15, 1898 each submitted its interpretation  
 Venezuela's interpretation had to do with lines and in others, Great

ment Venezuela's long claim ran in two valleys and Great Britain's

started and a controversy which had lasted for fifty-eight years  
 which had brought three nations to the very verge of war, was over

of R. Askwith, and Mr. Lowell.

Venezuela was represented by Dr. Domingo Herrera, ex-  
 + + + + + of the United States, Mr. S. Malet-Prevost, formerly secretary  
 of Mr. Tracy, and Mr. James Russelloley

days. Mr. Malet-Prevost showed for Venezuela in a speech of three

Harrison for Venezuela. Can I be mistaken in thinking General  
 + + + + + argument lasted the morning and? The speeches were  
 reported in shorthand and printed from day to day the whole  
 making eleven four volumes.

The Award — The award was completed and signed October 3, 1899  
 and assigned by all the judges. It was a short  
 + + + + + of an ordinary newspaper column  
 + + + + + the creation of the tribunal, to memorialize, and to  
 + + + + + before.

and decision, determination, and award of, + + + + + concerning the  
 + + + + + submit them to the said treaty of arbitration, and to  
 + + + + +, conformably to the said treaty of arbitration, have + + + + +  
 award and determine that the boundary line between the colony of  
 British Guiana and the United States of Venezuela is as follows:

+ + + + + starting from the coast at Point Maya, the line of boundary shall  
 + + + + +, + + + + +, + + + + +, + + + + +, + + + + +, + + + + +  
 + + + + +, + + + + +, + + + + +, + + + + +, + + + + +, + + + + +  
 to its source and from that point to the junction of the River Essequibo

7. The Assurance and Finance department, headed by V. V. Kuznetsov,

The trail ranges in a southeasterly direction of the Frontenac Mountains to the source of the Assiniboine to the Laurentian and then on along the

western and eastern sides of the road is a street line to the west and east of the road.

and along the midstream of that river to its junction with the Takutu, and thence along the midstream of the Takutu to its source, thence the stream got on to the western part of the Apurimac mountains.

1. *Order of the day*: 1. *Order of the day*

It is assumed that there are two types of the sovereignty of a  
 State of country claimed by two nations, second, internal and  
 external, as a mode of settling such disputes. As to the first, the

of such questions, this is strengthened by a unanimous award that

and principles upon which the award was reached. As I mentioned

A plot of  $\ln \eta$  vs.  $\ln \eta_0$  for polymer solutions for a fixed  $\eta_0$  from one solvent to another is satisfactory to none. Such a correlation conducted by the present investigators is not sufficient to suggest a further plot.

in theory, p. 101, but if it were natural law one might say the same thing. I never on this day could find it was published there was called to attention of a letter from John D. Brewer, in which he reported that I had said that

[illegible]

Courts either can or cannot, are concerned to settle disputes not yet possible, but to settle them—and so to keep good faith has settled this old and irritating dispute peacefully and lawfully, and I wish I could make it contrasted, however, with any

her device for settling not, arbitration, as the best means to be yet devised, and is cheap. Last week a statement of the expense in the case of the Venezuelan Boundary Arbitration was presented to the House of Commons. The cost to Great Britain from 1896 to last week was £15,675, or about \$120,000. The cost to Venezuela is not yet known, so far as I know, but is probably not less. The appropriation by Congress for the United States to maintain was \$100,000. So that the cost to the American Government in a matter that has lasted for years, and ended by peace and order, was about the same as that of a full year of collision, or, and as war expenses for an armed body. In the way of cost, the arbitration is almost unbeatable, and as to peace, Venezuela gets not at all the credit, which she deserves.

But what states had recognized the justice of her claim to this and had proposed to cease to Venezuela this (January) month; but since the British moved forward into this territory some fifteen years ago and took possession by force, it is impossible.

Nevertheless, Venezuela's efforts to induce her to withdraw from the territory month have been in vain. Nor could it be done. By her arbitration, therefore, Venezuela, the weaker power, gets something which is of value to her, for which she has always paid, which took from a possession herself of and the territory which she refused to accept, and after intervention. The very fact of her withdrawal is a possession, and a part of the territory month. Thus Venezuela sets it as to my mind an act of justice and a triumph for arbitration, which does much to persuade to a decision which law were in all respects as just as law.

But the Venezuelan and American view of American justice is far apart. As to private rights remaining from discovery, occupation, etc., as to rights based on blood and the other rights, as to the territory extent, and extent of political control respecting her these American

are certain to find themselves having irreconcilable views. All this

is proposed as a basis of settlement.



## KOREA THE HERMIT NATION

By General Sir HARRY W. WILSON,

*General Staff Officer,*

an country in eastern Asia which stretches south from the shores of  
Mandchuria, and is bounded on the east by the sea of

the of the

if the other it has been her unfortunate fate to suffer attack and  
outrage from China and Japan in turn. She has been a little  
more fortunate

gross of a good of which the mountain is character of the country  
can only be appreciated by actual experience. The travel is

land, where it turns conceal still more. It has been said there is  
no level land in the country, and this is almost literally true.

As a natural result of the lack of plains, the rivers are frequent  
and small, the Han being perhaps the most important. At the

when even above the capital city

[illegible]



the principal support of the country, snow falls frequently from December to February, but does not remain on the ground for an extended time owing to the proximity of the two seas bordering it on the east and west. The winter season, however, becomes very

through the inaccessible gorges,<sup>+</sup> chilling the traveler to the bone and rendering comfort impossible. They skirt far away to the

tropical regions, wear a thick coat of fur in place of the heavily decorated hair with which we are accustomed to see the Hengal adorned and clad. In northern Korea rice harvests are gathered by

the poorer sorts going to Russia.

of earth, varying in size according to the distance of the person buried as I mentioned without particular, but a careful examination of several hundred graves has re-

survivors a very definite plan is followed, not only in their shapes, but in their disposition and arrangement. I found them, without exception, following the outline of the torii.<sup>+</sup> No other arrangement

remnants of the dead.

Trees are generally planted in close proximity to a family cemetery, and are looked upon as a kind of decoration to destroy a tree standing near a grave. Respect for ancestors takes a deep impression here. When it is not unusual to hear an old soldier exclaim in the

at the grave of that warrior blood none can wipe out the affront.

are not different from those of the Japanese, however the hair is not worn as in the Japanese style, growing from a high forehead and reaching down to the shoulders.

The Korean boy, up to sixteen years of age, is generally clothed in the robe. He wears large iron hoops, especially around the neck, and has painted down the back and part of the face. He has been compelled to be shaved. As the years advance he grows up



into a young man, but the hair is not shaved. The hair is not shaved, but the hair is not shaved. The hair is not shaved, but the hair is not shaved.

They are not very handsome, but they are handsome. They are handsome, but they are not very handsome. They are handsome, but they are not very handsome.

... .., the two types of roses, a Japanese  
... .., the ... ..

The Japanese girl wears ... .., ... .., a  
... .. of two or three thicknesses of pure ... .. which  
... .. the ... .. of the female ... .. to which  
... .. are commonly given ... .. with the ... .. that  
... .. of ... ..

... .., when ... .. is ... ..  
... .. is ... .. by the ... ..  
... ..

... .. for food. ... .. of  
Japan, and seem to be as happy and as well pleased as  
... ..

... .., the ... .. is  
... .. are literally too little for ... ..





The first object to strike the visitor to the land of Morning Land is the richness of the material used. The universal adoption of white, and so great into the last year, and to be in progress up to the present time, but even in a part of the old white is uncontaminated by the east and western elements. The pieces of hats, shoes in the distribution, are made of leather for the wealthy warrior and of only straw for his poorer brother; but beneath the hat proper is a sort of cap of the same material and so shaped as to protect the curious little brain into which the hair is gathered a few months ago. The band of this undercap is drawn tightly about the brows, effecting a refreshing severe tension upon the senses. The other type of head covering shown is made of reeds and is worn by nomadic people and mountaineers.

The material of their waste clothing may be either cotton, silk, or the so-called grasscloth of China. The larger part of the cotton material used in the country is imported from India, the silk and grasscloth are frequently the product of India also.

Many years ago—long before the "western barbarians" reached the shores of the sea—the Koreans were noted among their Chinese and Japanese neighbors for the skill and taste displayed in their lacquer, furniture, and the products of their own soil. The four centuries ago with their pottery in all the work as then open in the land.

By the slow but sure degradation of wars, catastrophes, and revolutions, the fine arts as a whole in Korea gradually lost their value in both quantity and quality, until today her people, rich and poor alike, are dependent upon China and Japan for a large percentage of their clothing and pottery.

There is, however, one branch of manufacture, the working of iron, in which the Hermit Nation easily leads, the use of iron metal for domestic purposes being peculiar to this country. The bronze, which is of good quality, hard, and takes a good polish, is of an alloy of copper and tin, with a small percentage of zinc and a trace of iron. The bronze spoons, which were formerly supplied, are made of glass, as are the bowls and fire-pots, which are largely exported to Japan. These carved iron bowls are a pleasure to every Korean to use in gathering for the kitchen, for eating purposes, and for sleeping quarters. The same material is used in the manufacture of tools, lace supports, ceremonial bowls, and much that is on display in the museum and elsewhere.

From the regularity and finish of these various bronze articles it is difficult to believe that the tools employed are scarcely more advanced than those of two thousand years ago. For a little the Korean art satisfies the popular imagination by his foot as he is on the ground that he has seen up to and revolution in each direction, while the growing tool is held in the hand. Necessarily the process is a slow one, but

not by those crude and primitive processes would that the American worker.

Recent investigation has shown that Korea is rich in many of the better kinds of minerals, gold, silver, copper, iron and coal. The gold is almost solely in the core part into part of the kingdom and associated in many cases with silver. A peculiarity of the gold is that it is the intense yellow, resembling, in this respect, the Chinese gold, which is mined from the depths of the Korean mountains. The silver mines are not so numerous, but very interesting, especially for the output which has been obtained by native enterprise and about as a fair return for the amount of laborable silver. The great and principal drawback to the development of mining is the unaccessibility of the country to

transportation and modern machinery. Little is known of precious stones, for this form of personal adornment is not much in vogue among the Koreans, and few attempts have been made to develop the industry.

Through the Korean coast, marked with many castles, the old appearance has gone. There are, however, several beautiful bays, as an example, lies in the bay around the city of Seoul. The only people that are prohibited of visiting with the capital must not be allowed to go to the coast of war, and the relative of the not a few cities and for the mountain by, elsewhere.

As a rule, the nature of the Korean, in times past, seems to have shown much less interest than with the Chinese in the design, symmetry of the gates of Seoul and along artistic ability and a desire for improvement. The great south gate is a remarkable piece of work and the fact that it is still in use as an entrance to the city shows the excellence of its construction. The north gate is built of carefully dressed granite blocks and is as well, a perfect model and as true, from an architectural point of view as though erected yesterday in connection with the modern architecture. The gates seem to have been a favorite







# NICARAGUA, A QUESTION OF PERMANENCY OF THE NICARAGUA CANAL

By C. WILLIAM HAYES,

*U. S. Geological Survey.*

IN THE SENATE, December 31, 1888. To our most honorable  
with the investigations which have been carried on in the portion of  
the lake on top of the archipelago reached by Professor Hedberg  
appear to have some foundation, and hence they rest and lie upon  
the foundation of the proposed Nicaragua Canal and on the perman-  
ency of the lake as a waterway, the questions raised are of sufficient im-  
portance to be answered, even when the

stated very briefly Professor Hedberg's promises and conclusions  
are as follows: In 1881 the Spanish engineer Galister determined  
the altitude of Lake Nicaragua to be 133.11 feet above sea-level, a  
few fathoms. Later, in 1888, I examined the ground level from  
San Pedro and made the altitude of the lake's surface 128.4 feet above

sea-level, a route for a permanent canal and determined the elevation  
of the lake to be about 118 feet above sea-level. Subsequent  
determinations by Bull in 1881, Menocal in 1883, Le Marit and

de la Cruz about 114 feet above sea-level, and the Pacific. The dis-  
crepancy of 8 to 15 feet between the earlier and later determina-

on the earlier surveys. Professor Hedberg, however, concludes that  
the earlier determination were correct, and that the lake of the lake  
has been a fact and a fact between the dates of the earlier and later  
surveys. It will readily be seen that a change in  
elevation of 20 feet in a period of 14 years (between 1868 and 1882)  
would be a serious obstacle to the construction of a canal of the mag-  
nitude of the one proposed or to its permanency after construction.

There can be no supply of water in the lake, it is a fact about a change  
in the level of the lake surface. A depression of the whole of the



portion of the nation as without warping; (9) a depression of the lake basin by warping, the sea margins being being constant; (10) a depression down of the lake outlet.

town is located on a low sandy beach, which was thrown up by

so quickly apparent and would be a matter of record. The surface

top the banks

corner of the lake occupy, in their lower courses a rounded example

shows irregularities in the gradient. No such faulting is shown on the contrary, but certainly evidence that, recent uplift was

in the vicinity of Carato, on the Pacific coast north west of the de-

bars of the railroad which runs from Carato to Managua. This

of the coast could not possibly escape notice

the lake, has not suffered recent subsidence. A depression of the

have been too sufficient to produce a decrease in the altitude of its surface amounting to 2 feet would almost certainly have produced more or less leveling of the surface by the enlargement of some portions of the lake's perimeter more than others. It is quite conceivable that the rocks which I have been warned in such a manner that the lake shore at last I, as soon as I lowered 3 feet within the limit of about only 12 inches, and I was not affected and that at the same

time and not at all. If it is the case that had been necessary to be raised, so the portions of the shore would be drowned, while at other portions the lake bottom would be raised, and raised beach as left at the former shore line. Nearly the entire circuit of the lake was made by the writer and its shores were carefully studied with the object of ascertaining whether or not there existed any evidence of recent changes.

Owing to the regularity of the winds which prevail in this the different portions of the lake in the recent wide exposure

to present level of the lake. At the lower end and along the northwestern shore, where there is generally an offshore wind and consequently no great or strong force of the extensive depression into the lake, a

disturbance in height of stream and lake due to seasonal changes. A depression of 3 feet relatively to lake level would permanently flood these depressions, while an elevation of equal amount would raise the shoreline to level and water stream to new level, and shore line would be found at lower level.

Along the southern and side of the lake there is a rather heavy and the ice, and the greater part of the year. Wave erosion is therefore progress in some of the most of the surrounding, the character of the shore. The water of the lake is between the water margin and the base of the wave-cut cliff is everywhere perfectly adjusted to the wave-cut fluctuation and level and the character of the material in which the cliff is cut. Any recent change in the relation of lake level to shore would necessitate a readjustment of these conditions. A depression relative to lake level would have raised beaches above the reach of the highest flood water. A depression would drown the beach and start the waves to cutting at a higher level. Nothing of this kind was found, and it is certain that the relations of lake level to land have not suffered recent change on this side of the lake. The changes at the upper end of the lake in the vicinity of Toulign Bay are noted by Professor Thompson will be discussed later.

It is almost impossible to see how the level of the lake might have been raised so high by the cutting down of its outlet. As early as 1860 it is the result of the United States Survey of 1847-48, it appears probable that the level of the lake was early cut to the level determined by a rock about 100 feet on the Rio San Juan toward the outlet. There it has since been cut down even higher, and the lake level is now fixed by the level of the Rio San Juan which carries the Toro Napata. From the point where it issues from the lake to the Toro Napata the Rio San Juan remains a rough and irregular stream, with frequent former extensions of the lake filled up by the many streams except for the channel kept open by the outflow from the lake. The average of these plain stands at such a low level that it is just covered by the stream when in flood. It is obvious that it has the character of a growing flood plain, and proves conclusively that present records have to be for a considerable time. Any lowering of the lake level by cutting down the outlet would so increase this alluvial plain above the reach of floods and completely change its character. It has already been pointed out the sand which builds the lake at its

the waters which cross it so that in a relatively short time as geological changes go, the river may be expected to begin to rap.

0.0074 mol/l, 1.0000 g/l of NaOH T.S.

The excessive tariff on ink level has not been lowered by the government is of course confirmed by the absence of raised ink sales where it has like where they would certainly be a conspicuous feature of the change and taken into account suggests:

Changes in the elevation of the upper end of Lake Nemi may have been caused by Professor Hedger, as even one of a recent surveying of the lake's level. This depression arises from a number of the present physical conditions which prevail there. As stated above, the constant trade winds which sweep across the lake produce a heavy surf along its south western margin throughout the greater part of the year. The wind is directed on at which the waves strike the shore sets up a strong littoral current by which the sand is transported toward the northwest and deposited at the end of the lake.

## LEVEL OF THE LAKE

As materials are being transported northward, it is easy to understand

that it depends wholly upon the relation between rainfall and evaporation

that the level of the lake has fallen in recent times.

active northward and that the volcanic activity in both these groups is

principles from the nearest portions of the central range

from a relatively short period of observation. It is quite true that the amount of water flowing in the lower San Juan is becoming

less and less, which is now not a direct result from the loss of

more southerly distributions has been fully discussed in the report cited. Even between the head of the delta and the mouth of

portion in the volume of the stream has taken place, and, however, is merely a seasonal fluctuation.

and the longshore bars in the report of the canal company.

the other, due to extraordinary pressure on the nation's health-care system so much that the balance is seen tipped between nations.

about precipitation. It appears, therefore, in view of the co-existence

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[illegible]

"The present Panama Company," added Mr. Howard, "is, of course, a new one," has been organized, and money has been put out on a deep cut through the great dry in that they have to get through other ways. The work is being well done. As regards the Chagres River, we have found that the same water which has a headway for miles that is enough everywhere along with it from when they start they could draw it. We have a



[illegible]

## RAILWAY CONSTRUCTION AND IMPROVEMENTS

[illegible]

Perhaps the most important observation is that the world is no longer flat out of the bottom by a China as a lone truck might cover the Atlantic by airway and hence push the distance of 10,000 miles and 10 days from a large land and y-shape to right round the globe. The change in world characteristics was not so much a revolution as a steadily undulating wave motion, from a stage of low world activity to the one of high activity.

As a first step, the authors examined the relationship between the frequency of sleep and the amount of time spent in bed. They found that the more time a person spent in bed, the more time they spent sleeping. This relationship was found to be true for both men and women, and for both young and old people. The authors also found that the more time a person spent in bed, the more time they spent awake. This relationship was also found to be true for both men and women, and for both young and old people. The authors concluded that the amount of time a person spends in bed is a good indicator of the amount of time they spend sleeping.

and of 1.45, 1.40, and 1.35 respectively. The variation of  $\mu_{\text{eff}}$  of  $\text{H}_2$  or  $\text{H}_2\text{O}$  at different  $\text{CO}_2$  mole fractions,  $x_{\text{CO}_2}$ , are plotted in Figure 1.

THEOREM 1. *If  $\mathcal{C}$  is a CIPD, then  $\mathcal{C}$  is a CIPD if and only if  $\mathcal{C}$  is a CIPD.*

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\* The right to sue can only be exercised by one of the persons concerned with the offence, who is not the victim.













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<sup>5</sup> Ibid., vol. 1, in Mazzucato's words writing to deliver letters.

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**Excursion to High Island.**—A trip to High Island on the Potomac, just below the Little Falls, has been planned for Wednesday, April 4, 1900. It is expected that a party from the Teachers' Geography Club of Boston will also join in the excursion. Those members of the Society intending to make the trip will rendezvous in Georgetown, at the junction of the Metropolitan and Cabin John lines, at 1:30 P. M. Thence the party will proceed by electric car and on foot to High Island, where the topographic as well as the botanic and geologic features of the place will receive attention. The talk on topography and geology will be given by Mr G. K. Gilbert, of the U. S. Geological Survey; that on the botany of the region by Mr F. V. Coville, of the U. S. Department of Agriculture. Returning, the party will reach Washington by 6 P. M.

## THE ANNUAL FIELD MEETING

of the National Geographic Society has been arranged so that the members of the Society may have an opportunity to observe the total eclipse of the sun which takes place on Monday, May 28. As the center of the belt of totality will pass near Norfolk, Virginia, the board of managers of the Society have made a conditional contract with the Norfolk & Washington Steamboat Company for an excursion to that city and vicinity. The party will leave Washington by the Norfolk & Washington steamer at 7 o'clock P. M., Sunday, May 27. Returning, leave Norfolk at 6 o'clock Monday afternoon, reaching Washington on Tuesday morning in time for breakfast at home.

The total duration of the eclipse will be 2 hours, 34 minutes, and 6 seconds, of which 1 minute and 26 seconds will be total. The eclipse will be entirely over at 10:15.4 A. M., and from that hour until 6 o'clock the steamer will be at the disposal of the party for a cruise around the harbor and visits to the many points of interest around Norfolk, such as the Navy Yard, Portsmouth, Newport News, Fortress Monroe, the Indian Industrial School at Hampton, etc.

The cost of the round-trip ticket (including transportation and three meals on land Monday, but not including sleeping accommodations) will be \$8. The charge for state-rooms, accommodating two persons, will be from \$1 to \$3 for each person, according to location. The larger state-rooms can be made to accommodate 3 persons by placing a cot therein. A charge of fifty cents will be made in such cases. Cots in the main saloon will be charged for at the rate of fifty cents. These rates are for the round trip.

The number of tickets to be sold is limited to 250, and as there are only 90 state-rooms, accommodating 180 persons, on the boat, they will be allotted to members in order of their application. Members who desire state-rooms or cots should make their reservations as early as possible. A guarantee deposit of \$2 on each ticket will be required when the rooms are reserved.

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